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10/803,283

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Shankar Pal

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EXAMINER

RAYYAN, SUSAN F

ART UNIT

PAPER NUMBER

2167

MAIL DATE

DELIVERY MODE

08/06/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/803,283

Applicant(s)

PAL ET AL.

Examiner

Susan F. Rayyan

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 12, 2007 has been entered.

***Response to Arguments***

2. Applicant's arguments with respect to claims 1-12, 14-23 have been considered but are moot in view of the new ground(s) of rejection.

**DETAILED ACTION**

3. Claims 1-12, 14-23 are pending.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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**Claims 1-12, 14-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Publication Number 2003/0101169 issued to Vadiraja Bhatt et al (“Bhatt”) in view of US Patent 6,836,778 issued to Anand Manikutty et al (“Manikutty”).**

**As per claim 1 Bhatt teaches:**

A method for compiling a query including an extensible markup language based expression (Figure 8, element 802), the method comprising:

transforming an abstract syntax tree corresponding to the expression into a unified tree including extensible markup language based algebra operations (paragraph 80-82, 154, receives and parses a query received from an application and generates a logical tree which includes algebraic operations);

and mapping the extensible markup language based algebra operations in the unified tree to relational algebra based operations in a relational tree (paragraph 120, 155, Figure 8, element 803, the logical tree will be translated by the query translation module which includes algebraic operations).

Bhatt does not explicitly teach executing the query by modifying data that is stored in the node of the extendable markup language schema in accordance with the relational tree comprising the relational algebra based operations. Manikutty does teach this limitation (column 4, lines 50 to column 5, lines 10) to change XML data in a SQL compliant DBMS as described. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Bhatt with executing the query by

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modifying data that is stored in the node of the extendable markup language schema in accordance with the relational tree comprising the relational algebra based operations to change XML data in a SQL compliant DBMS as described by Manikutty (paragraph 4, lines 40-41).

**As per claim 2**, same as claim arguments above and Bhatt teaches:

wherein transforming the abstract syntax tree comprises:

recursively traversing the abstract syntax tree (paragraph 84-89, 121);

generating a unified sub-tree for each abstract syntax tree node, the sub-tree including at least one corresponding extensible markup language based algebra operation and inserting the sub-tree into the unified tree (paragraph 90-91, transformation process includes algebraic operations) .

**As per claim 3**, same as claim arguments above and Bhatt teaches:

recursively traversing the unified tree (paragraph 99, 121);

generating a relational sub-tree for each unified tree node, the sub-tree including at least one corresponding relational algebra based operation (paragraph 101, the query translation module receives as input the tree generated by the XQL parser and generates a physical operator tree which includes algebraic based operations) and inserting the sub-tree into the relational tree (paragraph 101).

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**As per claim 4**, same as claim arguments above and Bhatt teaches:

further comprising parsing the query to yield the extensible markup language based expression (paragraph 74).

**As per claim 5**, same as claim arguments above and Bhatt teaches:

further comprising parsing the extensible markup language based expression to yield the abstract syntax tree (paragraph 74).

**As per claim 6**, same as claim arguments above and Bhatt teaches:

further comprising generating a query plan according to the relational tree (paragraph 121, Figure 6).

**As per claim 7**, same as claim arguments above and Bhatt teaches:

further comprising submitting the query plan to a query processor for execution by the query processor (paragraph 121, Figure 6).

**As per claim 8**, same as claim arguments above and Bhatt teaches:

comprising mapping the extensible markup language based algebra operations in the unified tree to relational algebra based operations with nested table abstraction in the relational tree (paragraph 155).

**Claims 9-12, 14-23** limitations are rejected based on the same rationale as claims 1-8 and the limitation executing the query based on the query plan by using the nested table abstraction operation to establish a parent to descendent relationship to be established among instances of nodes in an extendable markup language schemas without compiling separate lists corresponding to each of the nodes of independent claims 16, 20 are taught by Bhatt at paragraph 75, lines 11-18, as link index stores linkage information about the parent-child relationship of nodes. This linkage information enables source document to recompose. The path index stores hierarchical information about particular items of data in the order that these items occur in the source document and Figure 3,323 query execution module.

#### **Contact Information**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan F. Rayyan whose telephone number is 571-272-1675. The examiner can normally be reached on M-F, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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August 1, 2007

  
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